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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/544,754 | 04/07/2000 | Vijay R. Basani | 020496/0004 | 2321 |

7590 04/10/2003

Brian L Michaelis Esq
Brown Rudnick Freed & Gesmer PC
One Financial Center
18th Floor
Boston, MA 02111

EXAMINER

CHANG, JUNGWON

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2154

DATE MAILED: 04/10/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/544,754

Applicant(s)

BASANI ET AL.

Examiner

Jungwon Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-20 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-20 are presented for examination.
2. It is noted that the line numbers in the claims do not correspond to the preferred format. The preferred format is to number each line of every claim, with each claim beginning with line 1. For ease of reference by both the Examiner and Applicant all future correspondence should include the recommended line numbering.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-10 and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Badovintz et al. (US 5,699,501) in view of Lim et al. (US 5,938,732).
5. As to claim 1, Badovintz et al. disclose the invention substantially as claimed, including a method for selecting a group leader among processing nodes (i.e. processors) in a multicast network segment (col. 1, lines 59-67) comprising the steps of:

configuring a set of said processing nodes (i.e. processors) to participate in electing a leader (col. 4, line 61 – col. 5, line 9);
determining when a new leader is needed (col. 5, lines 26-33); and
electing one processing node (i.e. processor) of said set to become said new leader (col. 5, lines 34-52).

6. Badovinatx et al. do not specifically use a word server. However, Badovinatx et al. disclose group of processing nodes (i.e. processors), wherein each processing node is coupled to the other processing nodes via an internal LAN connection (col. 3, lines 44-50), each processing node includes group services (200, 302, 304, fig. 3) for communicating between multiple processes of a process group (col. 4, lines 6-18 and 29-44; col. 5, lines 10-14). Moreover, Badovinatx et al. disclose a name server (700, fig. 7) is one of the processing nodes (col. 6, lines 10-12) and the name server can be a processing node within the processor group (col. 6, lines 17-19). Lim et al. disclose a plurality of hosts (fig. 2A; col. 9, lines 13-20). It would have obvious to one of ordinary skill in the art at the time the invention was made to have named the processing node or host as a server because a server is known as a computer that has capable of supplying information or service to other computer over the network.

Badovinatx et al. do not specifically disclose voting priority. However, Badovinatx et al. disclose the priority is ordered in the sequence of processors joining the group (col. 5, lines 34-41 and 53-62; col. 13, lines 4-8). It would have been obvious to one of ordinary

skill in the art at the time the invention was made to include voting priority because it would improve the quality of service by placing tasks according to priorities and processing tasks having high priority.

7. As to claim 2, Badovinatz et al. disclose calculating the corresponding voting priority according to the measurements (col. 5, lines 34-41 and 53-62).

8. As to claims 3 and 4, Badovinatz et al. disclose configuring each processing node (i.e. processor) that is not currently the group leader to listen for periodic messages from said group leader (col. 5, lines 44-46). Badovinatz et al. do not specifically disclose periodic message and periodic messages are multicast. However, Lim et al. disclose periodic message (i.e. heartbeat) and periodic messages are multicast (col. 3, lines 30-37; col. 6, lines 54-62; col. 8, lines 23-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings Badovinatz et al. and Lim et al. because Lim et al's heartbeat would improve the reliability by allowing the server to monitor other servers periodically and detect the failure if no heartbeat signal is received within a timeout interval (Lim's reference, col. 8, lines 23-30).

9. As to claims 5 and 7, Badovinatz et al. disclose multicasting (col. 6, lines 25-37; col. 7, lines 57-67).

10. As to claim 6, Badovinatz et al. further disclose determining the new leader according to the processing node (i.e. processor) claimed leadership with the highest voting priority (col. 5, lines 49-62).

11. As to claim 8, it is rejected for the same reasons set forth in the rejection of claim 1. In addition, Badovinatz et al. disclose a communication path from each participant to each other participant (col. 3, lines 37-40; col. 12, lines 57-60); a monitor process in each participant to determine which processing node (i.e. processor) is the current group leader (col. 5, lines 34-52; col. 6, lines 45-56).

12. As to claims 9, 10 and 12 are rejected for the same reasons set forth in claims 3 and 4.

13. As to claim 13, Badovinatz et al. disclose the priority is ordered in the sequence of processors joining the group (col. 5, lines 34-41 and 53-62; col. 13, lines 4-8).

14. As to claim 14, Badovinatz et al. disclose the invention substantially as claimed in claim 1. Badovinatz et al. do not specifically use a word registration of members of a cluster. However, Badovinatz et al. disclose a processor requests to become a member of a particular processor group (e.g., Processor Group X) when a process related to that group (e.g., Process X) requests to join a corresponding process group (e.g., Process Group X; col. 4, line 61 - col. 5, line 9); and multicasting a message directly to a

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selected group (col. 6, lines 25-37; col. 7, lines 57-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include registration of members because it allows only the authorized member of a specific group to access desired information and to receive notifications about changes or events that are occurred in that group.

15. As to claim 15, Badovinat et al. do not specifically disclose voting priority. However, Badovinat et al. disclose the priority is ordered in the sequence of processors joining the group (col. 5, lines 34-41 and 53-62; col. 13, lines 4-8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include voting priority because it would improve the quality of service by placing tasks according to priorities and processing tasks having high priority.

16. As to claims 16 and 17 are rejected for the same reasons set forth in claims 3 and 4.

17. As to claims 18-20, Badovinat et al. disclose at least some identification information selected from the set of : a server's name, a server's port number, and a secret key (col. 13, lines 9-25).

18. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Quoc et al, patent 6,092,214, Miller et al, patent 5,920,701 disclose method and apparatus for scheduling multicast data transmission.

Singh, G., "Leader Election in the Presence of Link Failures," March 1996, IEEE Trans. on Parallel & Distributed Systems, vol. 7, No. 3, pp. 231-236;

Kim et al., "A Leader Election Algorithm in a Distributed Computing System," August 1995, Proc. of the 5th IEEE Comp. Society Workshop on the Future Trends of Distributed Computing System, IEEE, pp 481-485;

Chow et al, "An Optimal Distributed Algorithm for Failure Driven Leader Election in Bounded-Degree Networks", April 1992, Proc. of the 3rd Workshop on the Future Trends of Distributed Computing Systems, IEEE, pp 136-141.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jungwon Chang whose telephone number is (703)305-9669. The examiner can normally be reached on 8:30-6:00 (Monday-Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703)308-9052. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-7239 for regular communications and (703)746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-9669.

Jungwon Chang
April 4, 2003


ZARNI MAUNG
PRIMARY EXAMINER